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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,930	01/09/2006	Guofu Zhou	NL030818	3621
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EXAMINER				
WILLIS, RANDAL L				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/563,930

Applicant(s)

ZHOU ET AL.

Examiner

RANDAL WILLIS

Art Unit

2629

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-11 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to application 10/563,930 filed January 9th 2006.
Claims 1-11 are currently pending and have been examined.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1, 2, 4-6, 8-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue (2002/0036616) in view of Doherty (5,912,712).

Apropos claim 1, Inoue teaches:

An electrophoretic display unit (1, Fig. 1) comprising:

- an electrophoretic display panel (2, Fig. 1) comprising lines with pixels (Pixel array 2A, Fig. 5);
- a line driver (2b, Fig. 2) for driving the lines; and
- a controller (4, Fig. 2) for supplying a line driving signal having a timing parameter to the line driver ([0063] and [0065]),

However Inoue fails to explicitly teach:

the controller being adapted to vary the timing parameter for varying a frame rate of the electrophoretic display unit (1).

In the same field of driving display devices, Doherty teaches a method of varying the frame times of the display (Abstract) by having the controller able to expand the PWM sequence (Col 1 lines 50-61).

Therefor it would have been obvious to one of ordinary skill in the art at the time of the invention to apply a controller able to handle varying frame rates as taught by Doherty in the electrophoretic display device of Inoue in order to reduce the number of PWM sequences and thus minimizing the memory and circuitry needed (Col 2 lines 5-10).

Apropos claim 2, Doherty further teaches:

An electrophoretic display unit as claimed in claim 1, wherein the timing parameter is formed by a delay of a start of the line driving signal (Col 2 lines 1-4 dropping a clock cycle delays the timing signal).

Apropos claim 4, Doherty further teaches:

An electrophoretic display unit as claimed in claim 1, wherein the timing parameter corresponds with a product of a predefined time-interval and a step value defined by a number of bits (Col 3 lines 65-Col 4 lines 10).

Apropos claim 5, Inoue teaches:

An electrophoretic display unit as claimed in claim 1, wherein a line corresponds with a row (Fig. 5).

Apropos claim 6, Doherty further teaches:

An electrophoretic display unit (1) as claimed in claim 1, further comprising a memory coupled to or incorporated in the controller for storing information about the timing parameter (PROM Col 5 lines 52-57).

Apropos claim 8, Inoue teaches:

A display device comprising an electrophoretic display unit as claimed in claim 1; and a storage medium for storing information to be displayed (6, Fig. 2).

Apropos claim 9, Inoue teaches:

A method for driving an electrophoretic display unit comprising an electrophoretic display panel comprising lines with pixels (Fig. 5);

the method comprising the steps of:

- driving the lines with the line driving signal (Inherent in display).

However, Inoue fails to explicitly teach:

- varying a timing parameter of a line driving signal for varying a frame rate of the electrophoretic display unit (1); and

In the same field of driving display devices, Doherty teaches a method of varying the frame times of the display (Abstract) by having the controller able to expand the PWM sequence (Col 1 lines 50-61).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to apply a controller able to handle varying frame rates as taught by Doherty in the electrophoretic display device of Inoue in order to reduce the number of PWM sequences and thus minimizing the memory and circuitry needed (Col 2 lines 5-10).

Apropos claim 10, Inoue teaches:

A computer program product for driving an electrophoretic display unit and comprising the functions of:

- in response to line driving signals, driving lines with pixels of the electrophoretic display unit (Fig. 5); and

However Inoue fails to explicitly teach:

- supplying a line driving signal having a timing parameter, which timing parameter is adapted to be varied for varying a frame rate of the electrophoretic display unit (1).

In the same field of driving display devices, Doherty teaches a method of varying the frame times of the display (Abstract) by having the controller able to expand the PWM sequence (Col 1 lines 50-61).

Therefor it would have been obvious to one of ordinary skill in the art at the time of the invention to apply a controller able to handle varying frame rates as taught by Doherty in the electrophoretic display device of Inoue in order to reduce the number of PWM sequences and thus minimizing the memory and circuitry needed (Col 2 lines 5-10).

Apropos claim 11, Inoue teaches:

- . A controller (4, Fig. 2) for supplying a line driving signal having a timing parameter to a line driver ([0063 and [0065]]) for driving lines with pixels (Fig. 5) of an electrophoretic display panel (DP) of an electrophoretic display unit (2, Fig. 2),
 - a controller (4, Fig. 2) for supplying a line driving signal having a timing parameter to the line driver ([0063] and [0065]),

However Inoue fails to explicitly teach:

the controller being adapted to vary the timing parameter for varying a frame rate of the electrophoretic display unit (1).

In the same field of driving display devices, Doherty teaches a method of varying the frame times of the display (Abstract) by having the controller able to expand the PWM sequence (Col 1 lines 50-61).

Therefor it would have been obvious to one of ordinary skill in the art at the time of the invention to apply a controller able to handle varying frame rates as taught by Doherty in the electrophoretic display device of Inoue in order to reduce the number of PWM sequences

5. Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue and Doherty in view of Yoshihara (2003/0010894).

Apropos claim 3, Inoue fails to explicitly teach:

An electrophoretic display unit as claimed in claim 1, wherein the timing parameter is formed by a duration of a line driving signal of a line.

However, in the same field of driving display devices, Yoshihara teaches varying the frame rate of the display by a control signal CS which sets the timing parameter for the display device ([0049] and [0050]).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the timing parameter varying of Yoshihara in the display device of Inoue in order to reduce color break ([0008]).

Allowable Subject Matter

Claim 7 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RANDAL WILLIS whose telephone number is (571)270-1461. The examiner can normally be reached on Monday to Thursday, 8am to 5pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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RLW

/Amr Awad/
Supervisory Patent Examiner, Art Unit 2629